Closing in on Closure

Debris, fuel racks are out of the K East Basin

Fluor Hanford workers have completed removing debris and fuel racks from the K East Basin. "Finishing this work represents a huge achievement," says Chris Lucas, K East Basin closure director, "because it allows us to effectively pump sludge from the basin. And, we have proven through our own experience that removing debris improves the working conditions in the basin and makes pumping sludge much more efficient."

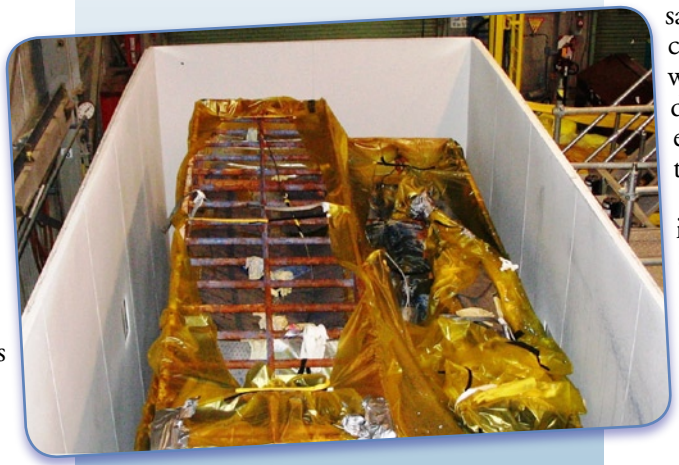
Approximately 100 tons of debris – including 40 tons of fuel racks – was removed from the K East Basin over the last year, most of it in the past six months. The K Basins Closure (KBC) Project stopped pumping sludge in early September 2005, to focus on removing debris. Nuclear chemical operators and other basin workers met to brainstorm better ways to grapple, rig, wash, package, and remove the unwieldy and highly contaminated debris.

"With the exception of the fuel racks, the debris varied in terms of size, shape, contamination levels, length of time in the basin, location of sharp edges, and other characteristics," says Rhonda Nissen, debris removal shift manager at the KE Basin. "This wide variation made it hard to handle any pieces of debris in a routine manner. The crews had to be creative each day, in each work evolution, and they really rose to the challenge. They developed ideas that worked in a practical sense, and ideas that were truly ingenious."

Rob Gentry, KE Basin sludge and debris manager, agrees. "We relied on the expertise and experience of the workers, and they performed beautifully." Gentry transferred to the KE Basin in September, to manage removing nearly 200 fuel racks and thousands of pounds of additional debris that had accumulated in the basin in the 30 years since it was reactivated to store N Reactor fuel.

Recently, observers from the Department of Energy, Richland Operations Office wrote a very positive report after watching KE Basin crews wash and load out a 1,200-pound sludge strainer and valve assembly. The report especially noted contamination control and safe conduct of operations.

Workers removing the debris on the sludge project wore two pairs of waterproof protective clothing, and used respirators, due to the high contamination levels in the basin. Electric hoists and underwater lights were necessary to guide the work.



IP-2 containers are filled, or partially filled, with debris from the K-East Basin (all photos).

Despite the rigor of the job, crews beat all expectations in accomplishing the work quickly...and safely. There were no major safety incidents, and only one first aid case.

Victory in removing the highly contaminated fuel racks came in December. The racks varied from 10 to 15 feet long, and weighed 300 to 500 pounds apiece. It took a crew of 15 to remove each rack. "The same people who did such a magnificent job removing racks are the ones who went on to remove the rest of the debris," says Lucas. "They demonstrated the same great performance with this very awkward debris."

Crews placed the debris and racks into large industrial containers (IP-2 containers) to be staged for burial as low-level waste. They filled 14 of the IP-2s, each of which is nearly 1,500 cubic feet in size and holds up to 20,000 pounds of debris. Twelve of the containers have already been buried as low-level waste in Hanford's Environmental Restoration Disposal Facility (ERDF). The remaining containers will be buried shortly.

"When we see work like this, we truly believe we are getting on with the K Basins closure work scope in a thorough, expeditious manner," says Pete Knollmeyer, KBC project vice president. "Work attitudes are positive, and people are feeling a real sense of accomplishment."

Nissen agrees. "It feels absolutely wonderful to be able to see the bottom of the K East Basin," she says. "Removing all this debris was truly an amazing accomplishment." Lucas confirms that the crews will be treated to a "well-deserved" celebration soon.

To date, the KBC Project has put nearly 87 percent of the sludge in the KE Basin in containers. Capturing the final 10-15 percent is expected to be the most difficult. Vacuuming the bulk of the sludge is scheduled to finish this summer.

Testing is currently underway on a hose-in-hose transfer system that will pump the sludge out of the K East Basin later this year, so that final remediation of the basin can proceed. ■

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